ClassPad 101

for ClassPad Version 3.00+

Lesson 2

Introduction to Main and the Soft Keyboard

Welcome

In this lesson, we will eventually explore the ClassPad's Main application and the soft keyboard. To begin, though, we need to cover some terminology that is common to all PC applications and some specific to the ClassPad.

Lesson Goals

- To learn basic window terminology
- To become comfortable using the Main Application
- To learn how to use the soft keyboard
- To learn how to change number format

In Lesson 2, you will learn how to:

- Identify specific parts of a window
- Use the ClassPad's soft keyboard
- Store a number in a variable and clear variables
- Use the Main application's buttons and menus
- Change number format
- Change from base 10 to other bases

Upon completion of this lesson, you will be able to answer the following questions:

1. What is an application?
2. What are two ways to open the soft keyboard?
3. How do I change from the abc keyboard to the 2D keyboard?
4. What does the button do?
5. What does the button do?
6. What are mode settings and how do we change them?
7. What information shows in the status bar?
8. What is a single variable?
9. What is the imaginary unit?

Time required

About 60 minutes.

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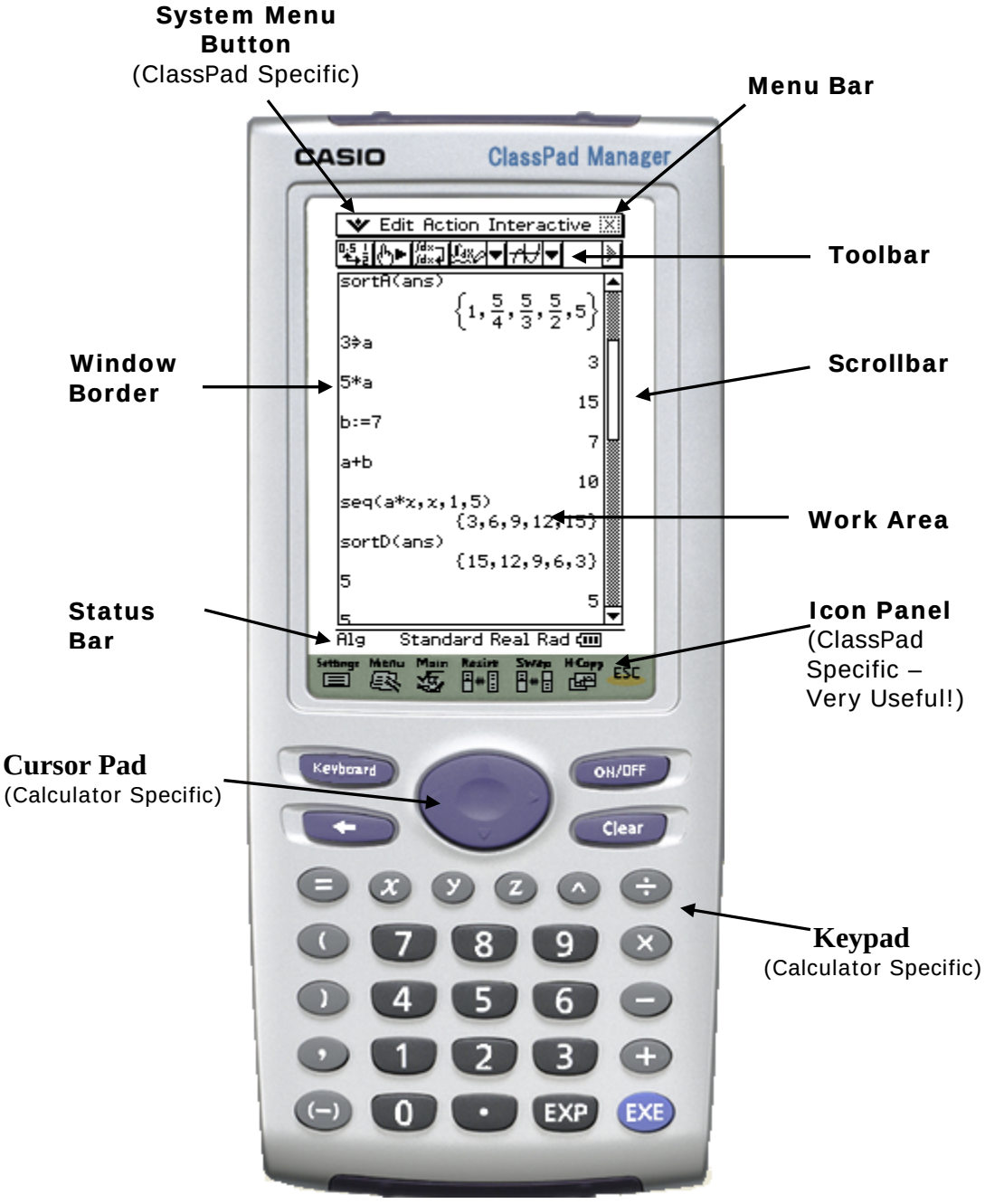
Getting Started

What is an *application*? In the computer world, we define *application* as *a computer program with a user interface.* You can think of an application as any program that you can open on your computer and do work in. The ClassPad Manager is an application with other applications inside. Most of its components (or parts) are the same as other PC applications; only a few are unique.

PART I

[Important] Become familiar with basic window terminology.



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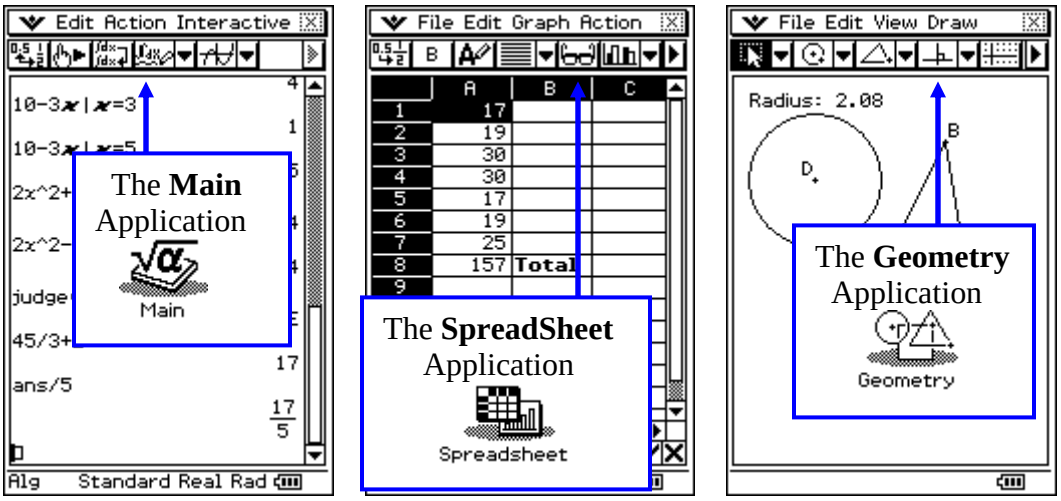
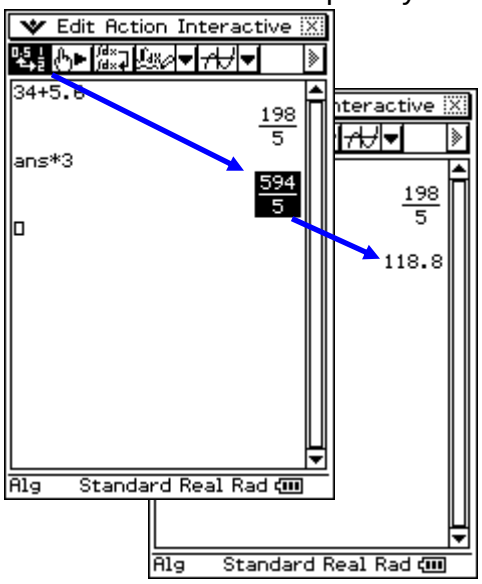
- **System Menu Button** ( ) Opens a menu that looks similar in all ClassPad applications. The System menu provides you with many dialogs to set ClassPad modes and other window options.

- **Menu Bar** Provides a row of menus that you can open and select commands from. The ClassPad's "Menu bar" will change for each different application. For example, notice the *different menu bars* and *toolbars*:

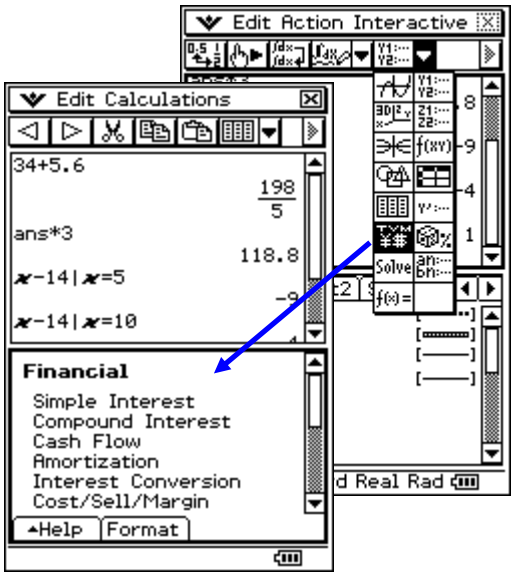


- **Toolbar** Provides a row of buttons that you can click to get a command or change modes. Some ClassPad toolbar buttons are in dropdown *button palettes*.

The **button** on Main's toolbar toggles a result between fraction and decimal quickly.



This dropdown ***button palette*** provides a way to insert other applications into Main.



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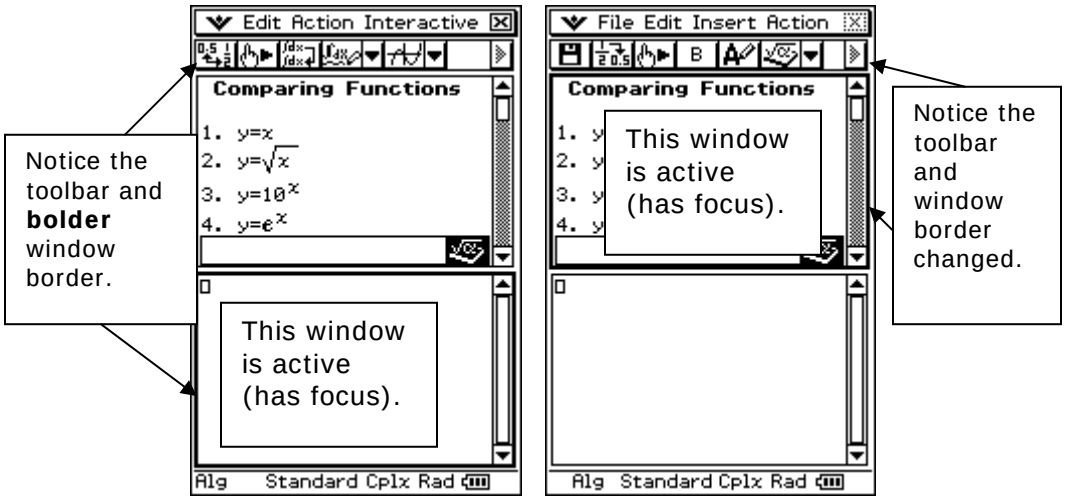
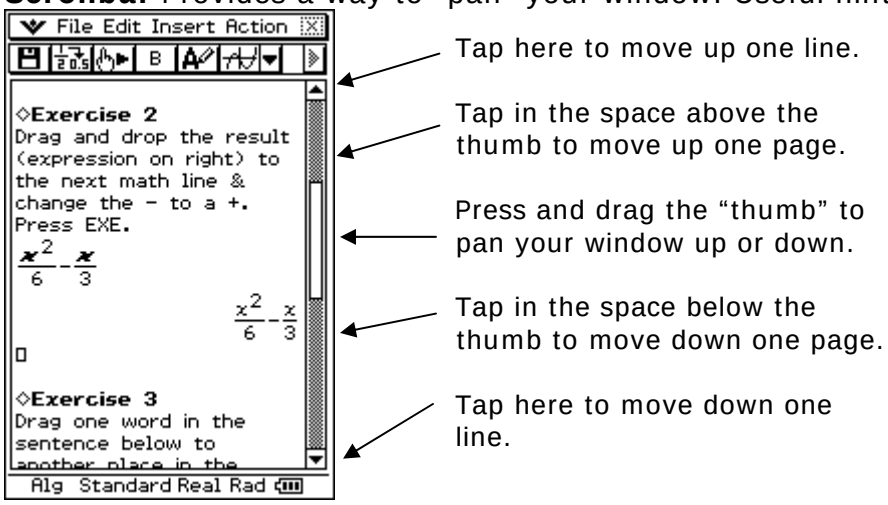
- **Window Border** A box or edge defining an application's work area. When more than one window is open, the active window (window with focus) will have a bolder border.

  You will learn a lot more about window borders and focus in the next lesson. For now, please just notice the difference.



- **Scrollbar** Provides a way to "pan" your window. Useful hints:


File Edit Insert Action
◇Exercise 2
Drag and drop the result (expression on right) to the next math line & change the − to a +. Press EXE.
◇Exercise 3
Drag one word in the sentence below to
Alg Standard Real Rad
Tap here to move up one line.
Tap in the space above the thumb to move up one page.
Press and drag the "thumb" to pan your window up or down.
Tap in the space below the thumb to move down one page.
Tap here to move down one line.

- **Work Area** Window area where we can input data.

- **Status Bar** Displays information about the application.

- **Icon Panel** Provides a row of buttons that you can click at any time.

- **Cursor Pad** Provides a way to move cursor position up, down, left or right.

- **Keypad** Provides quick access to the most commonly used keys.

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PART I
Practice Exercises

Before beginning the practice exercises, open a word document, type in the following information and then *save it as Lesson2 in your CASIO folder within My Documents*:

- Date: (enter today's date)
- To: (put your instructor's name here)
- From: (put your name here)
- Re: Lesson 2

1. Open your ClassPad Manager, if you have not already.
2. Click Menu on the icon panel.
3. Open the Main application.
4. Evaluate 32.7 – 18.9 (type it in and press EXE or Enter).
5. Select your answer by clicking on it and then click the button.
6. Get a **screen capture** and paste it into your Lesson2 document (under a title of PART I).
7. Evaluate 8/9 + 5/6.
8. Place the cursor anywhere on the line that you just entered (click it) and then click the button.
9. Get a **screen capture. *Please*** add two blank spaces following the first screen capture and then paste this one.
10. Select your answer by clicking on it and then click the button again. Notice that the button toggles your answer between a fraction and decimal.
11. Click Menu on the icon panel.
12. Open the Geometry application. Notice how different the toolbar looks.
13. Click on the triangle toolbar button ( ) and then click one time inside the window's work area. You should see a triangle. We will return to Geometry in lesson 3.
14. Get a **screen capture.** Add two blank spaces following the second screen capture and then paste this one.

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PART II

In this part, you will begin exploring the ClassPad's soft keyboard. As you will see, the soft keyboard is not just an everyday keyboard. It does contain a regular keyboard, but also many other very useful keys.

1. 2D Math Page

Sometimes in the instructions you will see a "/" between words. The "/" is a shorthand notation commonly used when writing instructions for working with menus. For example, **Edit/Clear All** indicates that you should open the **Edit menu** and select **Clear All**.

a. Open the Main application (Main)

b. Clear your window (select **Edit/Clear All**)

c. Press Keyboard

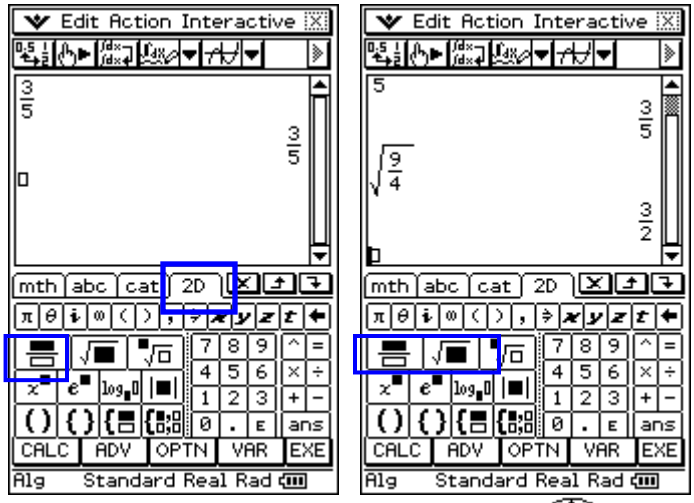
d. Click the 2D tab

e. Click the button

f. Input $\frac{3}{5}$ and press EXE

g. Click and then

h. Evaluate $\sqrt{\frac{9}{4}}$



[Hint: Click in the box or use to move the cursor to the denominator]

*Try a few other 2D math symbols and see what happens. Click on the **CALC** or **ADV** buttons to access other 2D forms.

2. mth Page (mth stands for math)

a. Clear your window (select **Edit/Clear All**)

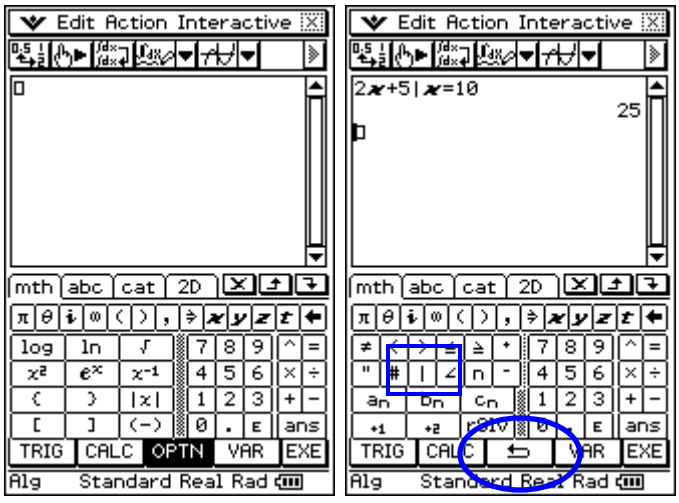
b. Click the mth tab

c. Click the **OPTN** button (along the bottom)

d. Input $2x+5$ x $=10$ and press EXE or Enter

*Notice there is an x on the soft keyboard (easy to find)

e. Press the back arrow button ( ) to go back.



Very useful button!

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3. Single Variables

In Algebra we learn that no symbol between variables (letters) means multiplication. The ClassPad also thinks this way when we use its single variables (bolder letters). Sometimes, however, we want to define a variable with more than one letter. For example, let width = length – 12. To do this, we can use letters from the regular keyboard.

a. Clear your window (select **Edit / Clear All**)

b. Click the **mth** or **2D** tab

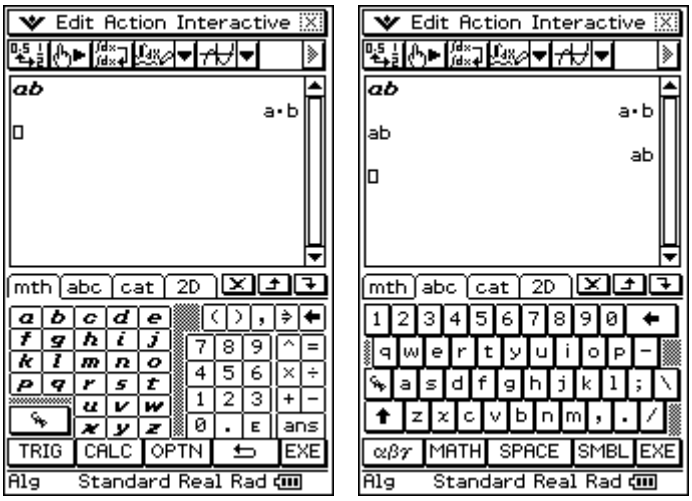
c. Click the **VAR** button (along the bottom).

d. Input ***ab*** and press EXE

*Notice the result

e. Click the **abc** tab

f. Input ab and press EXE
*Notice the result



4. The "Store" Key and Deleting Variables

a. Clear your window (select **Edit / Clear All**)

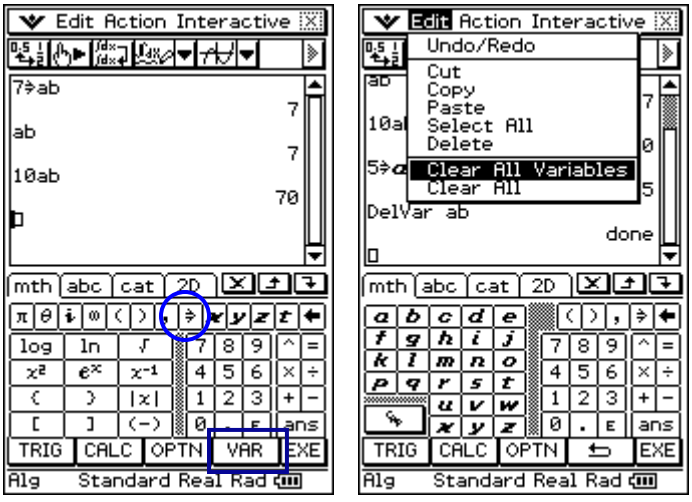
b. Click the **mth** or **2D** tab AND the ⮌ if it is showing

c. Input 7 ⇒ *ab* and press EXE

d. Input *ab* on the next line and press EXE

e. Input 10*ab* and press EXE

f. Press the VAR key



g. Input 5 ⇒ ***ab*** where ***a*** and ***b*** are single variables (we get an error message)

h. Delete the ***b*** and press EXE (the error is gone!)

i. To uninstall 7, type in **DelVar** *ab* and press EXE (*ab* now returns *ab*!)

j. **Important:** To delete all variable contents at one time, select **Edit / Clear All Variables** and then click **OK.**

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PART II
Practice Exercises

1. Open the Main application, clear your window and then open the system menu ( ) and select Keyboard. This is another way to open and close the keyboard.

2. Using 2D math, input and evaluate $\sqrt{2}+\sqrt{8}$

   [Hint: After inputting $\sqrt{2}$, press the right arrow key to get out from under the square root. Notice the blinking cursor becomes larger.]

3. Change your answer to a decimal.

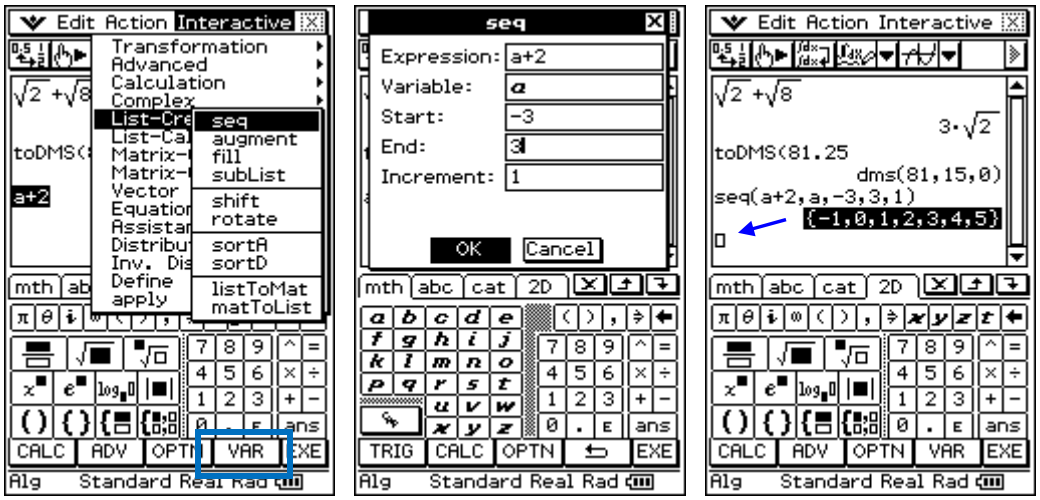
4. Get a **screen capture** and paste it into your Lesson2 document (under a title of PART II).

5. Click on the next math line (you will see the cursor). Open the **Action menu**, select **Transformation** and then **toDMS**. DMS stands for *degrees minutes seconds* and is used in angle measurements.

6. Evaluate toDMS(81.25).

7. Get a **screen capture.** Please add two blank spaces following the first screen capture and then paste this one.

8. Open the **Interactive menu**, select **List-Create** and then **seq.** Fill in the dialog that appears as follows:



9. Ok, now we will sum the sequence. **Select** your answer from step 9 and **drag** to the next math line.

10. **Select** the sequence you just dragged and then open the **Interactive menu**, select **List-Calculation** and then **sum.** Click **Ok** to the dialog that appears.

11. Get a **screen capture.** Add two blank spaces following the second screen capture and then paste this one.

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PART III

In this part, you will learn another way to store values, how to use the one finger toolbar button, change base and change the form in which your numbers display. For example, always show results as a decimal. Or, you may want to work with angles in degrees instead of radians. To change most settings we can use the Basic Format dialog box or just click the status bar.

We usually call these format settings "mode settings". Mode settings control how the ClassPad Manager handles math and other settings.

Important: What are your ClassPad's mode settings? Your status bar (along the bottom of this window) might say: ***Alg Standard Real Rad***

This means your ClassPad is set to:

- Algebra mode
- Standard number output
- Real numbers only
- Radian Mode (not degrees)

1. Basic Format Settings

a. Open Main and clear the window

b. Evaluate 5/6 (notice the result is exact)

c. Open the menu and select **Basic Format**

d. **Check** the box for **Decimal Calculation**

e. Click **Set**

f. Evaluate 5/6 and a few other fractions

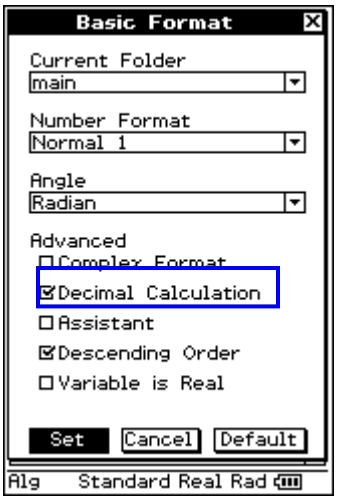
g. Open the Basic Format dialog box again

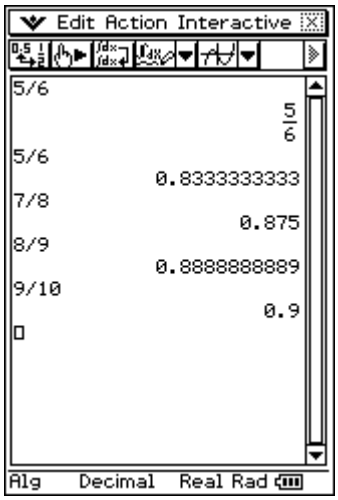
h. Change Number Format to Fix 2

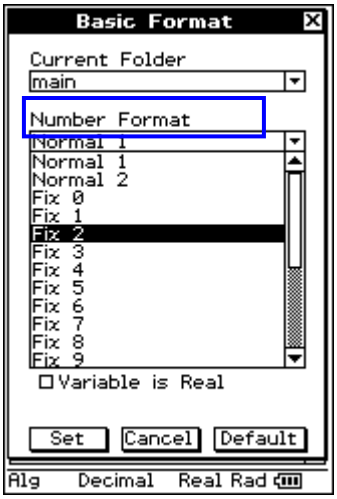
i. Click **Set**

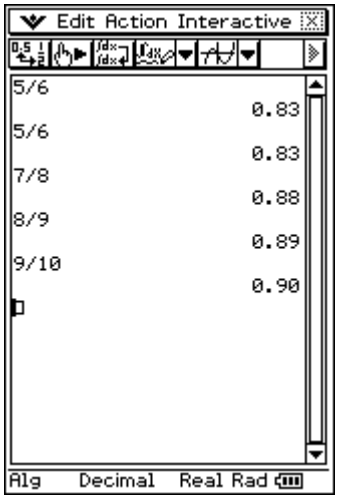
j. Click on your first math line and then **EXE** (nice!)

*But what if you want to go one line at a time?









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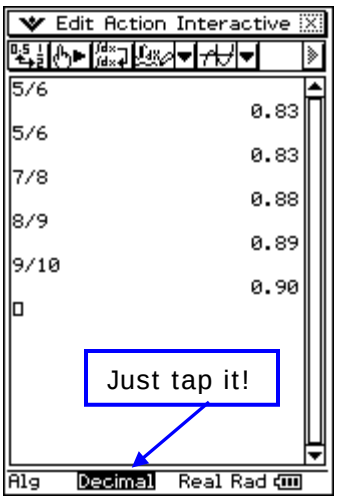
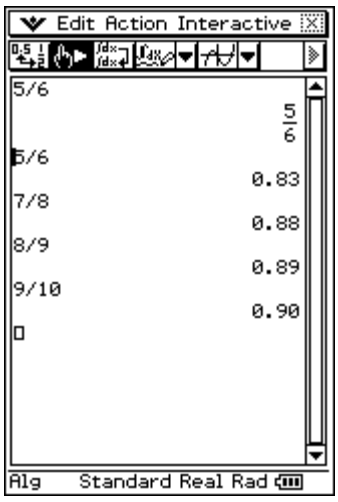
2. Status Bar and One Line at a Time

a. Notice your status bar
b. Click **Decimal** to toggle it back to **Standard**
c. Click on your first math line and then the ▶ button
d. Notice only the 1st output changed

*One line at a time please!

**Or, press EXE to re-execute everything.





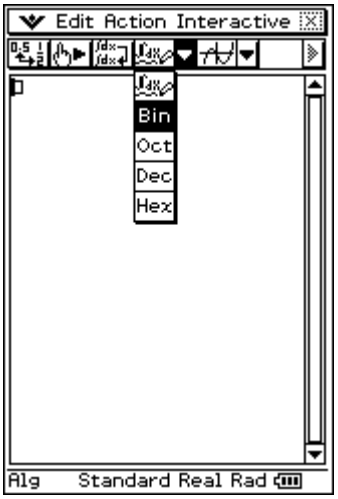
3. Changing Base

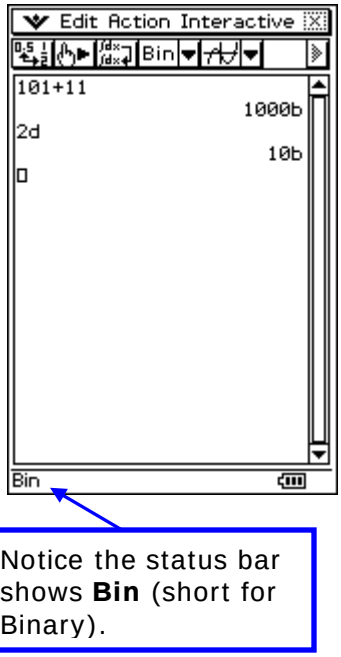
What does "base" mean? It has to do with place value. Well, as you know, $234=2*100+3*10+4$. This can also be written as $234=2*10^2+3*10^1+4*10^0$ (note that any # raised to the 0 power equals 1 *except* 0^0).

We work in base 10, but computers often work in base 2 or base 16. Base 2 is called ***binary*** and base 16 is called ***hexadecimal***. For example, 5 in base 2 is $101=1*2^2+0*2^1+2^0$. There are also many other bases that are common. You could really write a number in any base you want to!

For now, we will experiment with base 2 (binary) only. You may someday find this useful! It is definitely fun to think in a different base.

a. Open Main and clear the window
b. **Click** the 1st ▼ on the toolbar and select Bin
c. Input **101+11** and press **EXE**
d. Input **2** and press **EXE**
e. Bin mode (base 2) only knows 0 and 1!
f. Change **2** to **2d** to let the software know you mean base 10
g. Press **EXE**
h. Note $10b=1*2^1+0*2^0$ $=2$ (base 10)





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PART III
Practice Exercises

1. Open the Main application and select **Edit/Clear All**. Notice the status bar changed to show all modes again (no longer in Bin mode). This is a good thing!

2. A flea traveled **3.76** yards on the first day of its journey, **2.57** yards on the second and **1.99** yards on the last day. Using the Main application, calculate the total distance traveled.

3. To the nearest tenth, how far did the flea travel? Hint: Change your mode setting to Fix 1 and re-execute line one to display a decimal.

4. Get a **screen capture** and paste it into your Lesson2 document (under a title of PART III).

5. Complex number and real number results are sometimes different. "Complex" numbers occur when there is a negative under a square root.

6. Using 2D math, try to evaluate $\sqrt{-1}$. We get an error because $\sqrt{-1}$ is undefined in the real mode (notice Real shows in your status bar). If square roots are new to you, be patient, you will learn about them someday. For now, just experiment with the ClassPad.

7. Click ***Real*** in the **status bar** to toggle to ***Cplx*** or open the *Basic Format* dialog box and check the box for *Complex Format*. Re-evaluate $\sqrt{-1}$. So, you see $\sqrt{-1}$ = ***i***.[***i*** is often called the *imaginary unit*. "imaginary" in this sense does NOT mean non-existent; it means not a real number (not on the real number line).]

8. Get a **screen capture.** Please add two blank spaces following the first screen capture and then paste this one.

9. Ok, time to explore the soft keyboard. Try to find two music note symbols within the soft keyboard (they look like: ♪ and ♫).

   [Hint: You will find them by looking in one of the pages that appear when you click a lower button on the abc page! Remember to click the back arrow button to get back and the down arrows on the right to see more of a page.]

10. Click the symbols when you find them so that they show in your window. Get a **screen capture.** Add two blank spaces following the second screen capture and then paste this one.

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PART IV

Reflection Exercises

You have just completed the second lesson in ClassPad 101, great! Learning terminology is not as much fun as entering things into the ClassPad, but learning the terminology is important so that we can talk in a technical way! Try to review pages 2 and 3 until you are comfortable with each term. Or, you can print them so that you can refer to them quickly as needed.

Please take a few moments to copy and paste the following three questions at the end of your Lesson2 document and answer them.

1. Approximately how long did it take you to complete this lesson?
2. Which activity did you enjoy the most?
3. Did you find any part of this activity difficult to follow? If so, which part? Also, how did you overcome the difficulty?

Assessment 2: Introduction to Main and the Soft Keyboard

- **Checkpoint**: Your word processed document, titled "Lesson2", should contain the following activities:
  1. Three screen captures from PART I.
  2. Three screen captures from PART II.
  3. Three screen captures from PART III.
  4. Three reflection questions with answers from PART IV.

- **Submit** your **Lesson2 document** to your instructor for grading. Once your lesson is submitted, your lesson for ClassPad 101 "Intro to Main and the Soft keyboard" is complete.

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